

## **ABSTRACT OF THE DISCLOSURE**

An ultrasonic nebulizer for producing high-volume sub-micron droplets is disclosed. The ultrasonic nebulizer utilizes a 3 or 5MHz frequency as an oscillation frequency for producing sub-micron droplets. The nebulizer can 5 also use at least one piezoelectric ceramic oscillator for increasing the volume of the droplets. The ultrasonic nebulizer comprises an ac/dc converter, an oscillator circuit, an amplifying device, a nebulization chamber, and at least one piezoelectric ceramic oscillator. The ac/dc converter rectifies an ac current to a dc current. The oscillator circuit produces an oscillation 10 signal with a frequency larger than or equal to 3MHz. The amplifying device amplifies the oscillation signal. The nebulization chamber has a lower face for holding a liquid to be nebulized. At least one piezoelectric ceramic oscillator is formed on the lower face of the nebulization chamber and connected to the amplified signal providing an ultrasonic output to cause 15 nebulization for producing high-volume sub-micron droplets.